SANTA GERTRUDIS *Commercial Corner*

# SGBI AND USU COLLABORATIVE HETEROSIS PROJECT UPDATE

By Matthew Garcia M.S., MBA, Ph.D., Assistant Professor and Beef Specialist, Utah State University

Utah State University (USU) and Santa Gertrudis Breeders International (SGBI) founded a collaborative heterosis breeding project in January 2017. While utilizing Santa Gertrudis bulls in northern Utah may seem like a stretch, we viewed this as a major opportunity to address many of the issues that Utah cattlemen are facing and inject some performance, adaptability and longevity into Utah beef herds.

When the project was first being promoted, many producers voiced concerns about their cattle getting too big, being culled too early and not being very compatible with their production environments. Additionally, there were concerns with utilizing Santa Gertrudis genetics, due to the perception producers had of the breed and the inclusion of *Bos indicus* genetics. As such, the first year of the project was spent addressing these concerns and presenting how utilizing Santa Gertrudis genetics to produce an F1 animal that was only 19 percent Brahman could potentially address some of the production issues they were facing. However, we still needed to produce data and hard evidence that this was a beneficial project to Utah producers.

In April 2017, a pilot project was conducted to test the feasibility and applicability of the project in the northern Intermountain West. The first year utilized 38 cows that were synchronized and artificially inseminated (AI) with semen from a very specific bull battery. The bulls were very high calving ease, moderate growth, moderate mature size, lower milk production and above average scrotal circumference, with a heavy focus on high levels of carcass quality and composition traits. A total of 16 calves were compared to 22 natural-sired calves from Angus bulls. Any concerns with birth weight were negated when Santa Gertrudis-sired calves averaged 76-pound birth weights as compared to 80-pound birth weights from the natural-sired calves. However, all calves weaned at approximately 586 pounds, and entered the feedlot at 1,060 pounds (Santa Gertrudis) and 1,075 pounds (Angus). While there was a difference in feedlot in-weight, it was right in line with the selection program in which we made a concerted effort to select for a more moderate mature size. Calves produced from this portion of the project are currently being finished and will have carcass data collected at a commercial packing plant in Hyrum, Utah.

The second year of the project utilized a much larger group of USU cattle (approximately 120 cows). Cows were again synchronized, AI'd to the same group of bulls from year one and cleaned up with Angus bulls. A total of 51 Santa Gertrudis calves were born, compared to 55 Angus-sired calves.

These calves addressed the ability of the Santa Gertrudis calves to handle cold weather. When these calves were born in February, the average high was 26° F with an average low of 10° F. There were no Santa Gertrudis calves lost to freezing as opposed to six frozen Angus calves.

All calves were weaned Sept. 19, 2019, and adjusted weaning weights were 549 pounds for Santa Gertrudis calves and 499 pounds for the Angus-sired calves. All calves were preconditioned for 45 days. Steer calves have entered the feedlot at the USU South Farm, where they will be finished and feedlot performance data collected. All heifer calves will be retained and given the opportunity to enter the USU herd as replacement females. Feedlot data on the calves will be collected using the GrowSafe System® to ensure accuracy of individual performance measurements. Upon completion of the finishing period, all calves will be sent to a commercial packing plant in Hyrum, Utah, for the collection of carcass quality and composition traits.

**USU is currently working to establish a purebred seedstock herd to further our research endeavors and potentially provide an opportunity for more Utah producers to incorporate Santa Gertrudis genetics into their herds.**

CONTINUED ON PAGE 28 ❯

## COMMERCIAL CORNER
CONTINUED FROM PAGE 18

In year three (April 2019), the heterosis project was expanded to all cows in the USU herd. However, this past spring, we purchased three bulls from Red Doc Farm in New Mexico. We also were very fortunate to utilize a Red Doc bull donated for the breeding season by Paul McCollum. The herd was evenly split into 80 cows to be covered by the Santa Gertrudis bulls and 80 cows to be covered by the Angus bulls.

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This portion of the project was conducted with live bulls for two reasons. The first was to increase the numbers of F1 Santa Gertrudis calves in the USU herd. The second was to test how Santa Gertrudis bulls would perform during a breeding season in the northern Intermountain West. Needless to say, the Santa Gertrudis bulls did not disappoint in their ability to cover their cows and a good portion of the cows that were assigned to the Angus bulls. As such, USU will be parentage testing all calves this upcoming calving season to determine the true number of Santa Gertrudis-sired calves from this previous breeding season. As in previous years, steer calves will enter the feedlot and have carcass data collected at the end of the finishing period, and the heifers will be incorporated into the USU herd as potential replacements.

While we have completed three years of breeding, this project has grown in size and disciplines. We currently have two individual producers in the state who are incorporating Santa Gertrudis genetics into their herds. These producers will also collect data and provide us outside herds to potentially verify the results seen in the current USU project. From a research standpoint, there has been significant interest from USU researchers to utilize the Santa Gertrudis calves.

Projects ranging from nutrition, mineral supplementation, carcass quality, grazing behavior and epigenetics have been initiated utilizing the F1 Santa Gertrudis calves. Furthermore, USU is currently working to establish a purebred seedstock herd to further our research endeavors and potentially provide an opportunity for more Utah producers to incorporate Santa Gertrudis genetics into their herds.

We are very grateful for this opportunity to work with SGBI. We understand that this project will produce information that is very valuable to beef producers, and we believe that this heterosis project will continue for many years to come!

For more information or detailed discussion, please contact me at *matthew.garcia@usu.edu* or (435) 797-2144.